

**EXHIBIT 1**

**DECLARATION OF IRENE YANG IN SUPPORT OF HUAWEI'S OPPOSITION TO  
SAMSUNG'S MOTION TO STRIKE PORTIONS OF HUAWEI'S EXPERT REPORTS**

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**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN FRANCISCO DIVISION**

HUAWEI TECHNOLOGIES CO., LTD.,  
HUAWEI DEVICE USA, INC. and  
HUAWEI TECHNOLOGIES USA, INC.

Samsungs/ Counterclaim-  
Huaweis,

v.

SAMSUNG ELECTRONICS CO., LTD.,  
SAMSUNG ELECTRONICS AMERICA,  
INC.,

Huaweis/Counterclaim-  
Samsungs,

and

SAMSUNG RESEARCH AMERICA,

Huawei,

v.

HISILICON TECHNOLOGIES CO., LTD.,

Counterclaim-Huawei.

Case No. 16-cv-02787-WHO

**HUAWEI'S FIRST  
SUPPLEMENTAL INVALIDITY  
CONTENTIONS**

Group	References
3GPP Technical Specifications	3GPP TS 36.211 v1.0.0-8.7.0; 3GPP TS 36.212 v1.0.0-8.7.0
3GPP Submissions	R1-062740; R1-070266; R1-070777; R1-071000; R1-072121; R1-072122; R1-072313; R1-072122
Signal Mapping References	R1-062740; R1-070266; R1-071000; R1-072122; R1-072313; 3GPP TS 36.211 v1.0.0-v8.7.0; U.S. 7,613,245; U.S. 8,223,854; U.S. 2006/026871; U.S. 2007/0171995; U.S. 2008/0090528; U.S. 2008/0200196; U.S. 2008/0298502; U.S. 2009/0262699; U.S. 2010/0008435; U.S. Patent Appl. No. 60/890/589
Signal Multiplexing References	R1-062740; R1-070777; R1-071000; R1-072121; R1-072313; 3GPP TS 36.212 v1.0.0-v8.7.0; U.S. 7,613,245; U.S. 8,223,854; U.S. 2006/026871; U.S. 2007/0171995; U.S. 2008/0090528; U.S. 2008/0200196; U.S. 2008/0298502; U.S. 2009/0262699; U.S. 2010/0008435; U.S. Patent Appl. No. 60/890/589

### (i) 3GPP Technical Specifications

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are titled "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation" (TS 36.211) and "Multiplexing and channel coding" (TS 36.212) and are directed, among other disclosures, to multiplexing and mapping of data and control information/signals in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the '130 Patent, including but not limited to references in the 3GPP Submissions group, Signal Mapping References group, and/or Signal Multiplexing References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### (ii) 3GPP Submissions

1 The references in the 3GPP Submissions group were submitted by contributors to 3GPP  
2 working groups related to signal multiplexing and mapping in a mobile communication system. It is  
3 common practice for these submissions to be uploaded to a publicly available website to further  
4 collaboration among fellow technical professionals. These submissions are often discussed and  
5 presented at working group meetings. The references in this group are directed to multiplexing and  
6 mapping of data and control signals in a mobile communication system and mappers and/or  
7 multiplexors associated with such mobile communication system. Therefore, a person of ordinary  
8 skill would have been motivated to combine the 3GPP Submissions with other prior art references  
9 related to the subject matter of the '130 Patents, including but not limited to references in the 3GPP  
10 Technical Specifications group, Signal Mapping References group, and/or Signal Multiplexing  
11 References Group.

12 Specific evidence of the motivation to combine includes the references and passages therein  
13 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
14 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
15 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
16 will be disclosed at a later appropriate stage of this case.

### 17 **(iii) Signal Mapping References**

18 The references in the Signal Mapping References group are all related to mapping of data  
19 and control information/signals in the symbols of sub-frame slots in a mobile communication  
20 system. Therefore, a person of ordinary skill would have been motivated to combine the Signal  
21 Mapping References with other prior art references related to the subject matter of the '130 Patent,  
22 including but not limited to references in the 3GPP Technical Specifications group, 3GPP  
23 Submissions group, and/or the Signal Multiplexing References group.

24 Specific evidence of the motivation to combine includes the references and passages therein  
25 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
26 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
27 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
28 will be disclosed at a later appropriate stage of this case.

#### (iv) Signal Multiplexing References

The references in the Signal Multiplexing References group are all related to multiplexing of different (*e.g.*, data and control) information/signals in the same symbol of sub-frame slots in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the Signal Multiplexing References with other prior art references related to the subject matter of the ‘130 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, and/or the Signal Mapping References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

#### (b) ‘195 Patent

The Asserted Claims of the ‘195 Patent are allegedly directed to “receiving control channels by restricting a set of the control channels in a wireless communication nsystem” and recite receiving and determining a set of control channel candidates based on a UE identifier and monitoring one or more control channel candidates from the determined set. Well before the ‘195 Patent’s asserted priority date, standards, submissions, and a variety of other publications relating to this topic were well developed. Examples of such references are charted in Exhibits B-1 through B-7. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TS 25.304 v5.9.0; 3GPP TS 36.211 v0.3.1-8.7.0; 3GPP TS 36.213 v0.2.1-8.7.0; 3GPP TS 36.300 v.1.0.0-8.9.0
3GPP Submissions	R1-060855; R1-061433; R1-070921; R1-071216; R1-071218; R1-071221; R1-071223; R1-071353; R1-071820; R1-081101;
Control Channel Selection References	3GPP TS 36.213 v0.2.1-8.7.0; R1-060855; R1-061433; R1-071216; R1-071218; R1-071221; R1-071223; R1-081101; U.S. 5,408,684; U.S. 7,643,454; U.S. 7,912,471; U.S. 8,433,331; U.S. 2007/0058523; WO 2005/112486

Group	References
Control Channel Signaling References	3GPP TS 36.211 v.0.3.1-8.7.0; 3GPP TS 36.213 v0.2.1-8.7.0; 3GPP TS 36.300 v1.0.0-8.9.0; R1-060855; R1-070921; R1-071216; R1-071218; R1-071221; R1-071223; R1-071353; R1-071820; R1-081101; U.S. 7,912,471; U.S. 8,433,331; U.S. 2007/0058523; U.S. 2008/0232307; U.S. 2009/0262699; WO 2005/112486

### (i) 3GPP Technical Specifications

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are titled "User Equipment (UE) procedures in idle mode and procedures for cell reselection in connected mode" (TS 25.304), "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation" (TS 36.211), "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures" (TS 36.213), and "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description" (TS 36.300) and are directed, among other disclosures, to selection and monitoring of control channels in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the '195 Patent, including but not limited to references in the 3GPP Submissions group, Control Channel Selection References group, and/or Control Channel Signaling References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### (ii) 3GPP Submissions

The references in the 3GPP Submissions group were submitted by contributors to 3GPP working groups related to signal multiplexing and mapping in a mobile communication system. It is common practice for these submissions to be uploaded to a publicly available website to further

1 collaboration among fellow technical professionals. These submissions are often discussed and  
2 presented at working group meetings. The references in this group are directed to selection and  
3 monitoring of control channels in a mobile communication system. Therefore, a person of ordinary  
4 skill would have been motivated to combine the 3GPP Submissions with other prior art references  
5 related to the subject matter of the '195 Patents, including but not limited to references in the 3GPP  
6 Technical Specifications group, Control Channel Selection References group, and/or Control  
7 Channel Signaling References group.

8 Specific evidence of the motivation to combine includes the references and passages therein  
9 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
10 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
11 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
12 will be disclosed at a later appropriate stage of this case.

### 13 **(iii) Control Channel Selection References**

14 The references in the Control Channel Selection References group are all related to selection  
15 of control channels in a mobile communication system. Therefore, a person of ordinary skill would  
16 have been motivated to combine the Control Channel Selection References with other prior art  
17 references related to the subject matter of the '195 Patent, including but not limited to references in  
18 the 3GPP Technical Specifications group, 3GPP Submissions group, and/or the Control Channel  
19 Signaling References group.

20 Specific evidence of the motivation to combine includes the references and passages therein  
21 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
22 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
23 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
24 will be disclosed at a later appropriate stage of this case.

### 25 **(iv) Control Channel Signaling References**

26 The references in the Control Channel Signaling References group are all related to  
27 transmission and reception of one or more control channels in a mobile communication system.  
28 Therefore, a person of ordinary skill would have been motivated to combine the Control Channel

Signaling References with other prior art references related to the subject matter of the '195 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, and/or the Control Channel Selection References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

**(c) '588 Patent**

The Asserted Claims of the '588 Patent are allegedly directed to “controlling an active time period during a Discontinuous Reception (DRX) operation in a User Equipment (UE) in a mobile communication system” and recite timers associated with a mobile communication system. Numerous prior art references disclose timers associated with a mobile communication system and controlling an active time period during a DRX operation in a mobile communication system. Well before the '588 Patent's asserted priority date, standards, submissions, and a variety of publications relating to this topic were well developed. Examples of such references are charted in Exhibits D-1 through D-11. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TS 25.212 v5.4.0; 3GPP TS 36.300 v8.8.0; 3GPP TS 36.321 v8.8.0
3GPP Submissions	R2-060023; R2-060591
Data Transmission References	3GPP TS 25.212 v5.4.0; 3GPP TS 36.300 v8.8.0; 3GPP TS 36.321 v8.8.0; R2-060023; US 7,826,818; US 5,752,202; US 5,604,744; US 6,871,074; US 2002/0172178 A1; US 2005/0085279 A1; US 2007/0160027 A1
Power Conservation References	3GPP TS 25.212 v5.4.0; 3GPP TS 36.300 v8.8.0; 3GPP TS 36.321 v8.8.0; US 7,826,818; US 5,752,202; US 2002/0172178 A1; US 2007/0160027 A1
Timer References	3GPP TS 25.212 v5.4.0; 3GPP TS 36.300 v8.8.0; 3GPP TS 36.321 v8.8.0; R2-060591; R2-060023; US 7,826,818; US 5,752,202; US 5,604,744; US 6,871,074; US 2002/0172178 A1;



Group	References
	US 2005/0085279 A1; US 2007/0160027 A1

### (i) 3GPP Technical Specifications

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are titled "Multiplexing and channel coding (FDD)," (TS 25.212), "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description" (TS 36.300), and "Evolved Universal Terrestrial Radio Access (E-UTRA); Medium Access Control (MAC) protocol specification" and are directed, among other disclosures, to DRX operations in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the '588 Patent, including but not limited to references in the 3GPP Submissions group, Data Transmission References group, Power Conservation References group, and/or the Timer References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### (ii) 3GPP Submissions

The references in the 3GPP Submissions group were submitted by contributors to 3GPP working groups related to DRX operations in a mobile communication system. It is common practice for these submissions to be uploaded to a publicly available website to further collaboration among fellow technical professionals. These submissions are often discussed and presented at working group meetings. The references in this group are directed to DRX operations in a mobile communication system and timers associated with a mobile communication system. Therefore, a

1 person of ordinary skill would have been motivated to combine the 3GPP Submissions with other  
2 prior art references related to the subject matter of the '588 Patents, including but not limited to  
3 references in the 3GPP Technical Specifications group, Data Transmission References group, Power  
4 Conservation References group, and/or the Timer References group.

5 Specific evidence of the motivation to combine includes the references and passages therein  
6 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
7 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
8 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
9 will be disclosed at a later appropriate stage of this case.

### 10 **(iii) Data Transmission References**

11 The references in the Data Transmission References group are all related to transmitting data  
12 in a mobile communication system. Therefore, a person of ordinary skill would have been  
13 motivated to combine the Data Transmission References with other prior art references related to the  
14 subject matter of the '588 Patent, including but not limited to references in the 3GPP Technical  
15 Specifications group, 3GPP Submissions group, Power Conservation References group, and/or the  
16 Timer References group.

17 Specific evidence of the motivation to combine includes the references and passages therein  
18 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
19 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
20 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
21 will be disclosed at a later appropriate stage of this case.

### 22 **(iv) Power Conservation References**

23 The references in the Power Conservation References group are all related to conservation of  
24 power in the context of a mobile communication system. Therefore, a person of ordinary skill would  
25 have been motivated to combine the Power Conservation References with other prior art references  
26 related to the subject matter of the '588 Patent, including but not limited to references in the 3GPP  
27 Technical Specifications group, 3GPP Submissions group, Data Transmission References group,  
28

1 and/or the Timer References group.

2 Specific evidence of the motivation to combine includes the references and passages therein  
3 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
4 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
5 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
6 will be disclosed at a later appropriate stage of this case.

#### 7 **(v) Timer References**

8 The references in the Timer References group are all related to timers associated with a  
9 mobile communication system. Therefore, a person of ordinary skill would have been motivated to  
10 combine the Timer References with other prior art references related to the subject matter of the '588  
11 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP  
12 Submissions group, Data Transmission References group, and/or the Power Conservation  
13 References group.

14 Specific evidence of the motivation to combine includes the references and passages therein  
15 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
16 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
17 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
18 will be disclosed at a later appropriate stage of this case.

#### 19 **(d) '726 Patent**

20 The Asserted Claims of the '726 Patent are allegedly directed to Hybrid Automatic Repeat  
21 reQuests (HARQs) in a mobile communication system. The claims recite receiving a number of  
22 HARQ processes, receiving data according to persistent resource allocation interval information,  
23 calculating a HARQ process ID, and associating a HARQ process with the HARQ process ID.  
24 Essentially, they are directed to quality control and scheduling resources in a mobile communication  
25 system. Understanding the limited bandwidth constraints in cellular networks, one of ordinary skill  
26 would have been motivated to reduce the quantity and frequency of information transmitted across  
27 those networks. To do so, one of ordinary skill would have utilized existing techniques to achieve  
28 this goal including, but not limited to, determining or calculating certain data based on known

information. As a result, the determined or calculated data need not be transmitted, thereby reducing network constraints. Numerous prior art references disclose this functionality in a mobile communication system. Well before the '726 Patent's asserted priority date, standards, submissions, and a variety of publications relating to this topic were well developed. Examples of such references are charted in Exhibits G-1 through G-10. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TS 25.814 v7.1.0; 3GPP TS 36.331 v8.7.0; 3GPP TS 36.321 v8.7.0
3GPP Submissions	R2-071460; R2-072400; R2-071598; R2-071368; R2-075153; R1-072883
Scheduling References	3GPP TS 25.814 v7.1.0; 3GPP TS 36.331 v8.7.0; 3GPP TS 36.321 v8.7.0; US 2005/0250454 A1; US 8,995,383; R2-071460; R2-072400; R2-071598; R2-071368; R2-075153; R1-072883
Quality Control References	3GPP TS 25.814 v7.1.0; 3GPP TS 36.331 v8.7.0; 3GPP TS 36.321 v8.7.0; US 2005/0250454 A1; US 8,995,383; R2-072400; R2-071368; R2-075153; R1-072883

**(i) 3GPP Technical Specifications**

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are directed, among other disclosures, to quality control and scheduling resources in a mobile communication system including through HARQ processes. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the '726 Patent, including but not limited to references in the 3GPP Submissions group, Scheduling References group, and/or the Quality Control References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may

1 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
2 will be disclosed at a later appropriate stage of this case.

### 3 **(ii) 3GPP Submissions**

4 The references in the 3GPP Submissions group were submitted by contributors to 3GPP  
5 working groups related to quality control and scheduling resources in a mobile communication  
6 system including through HARQ processes. It is common practice for these submissions to be  
7 uploaded to a publicly available website to further collaboration among fellow technical  
8 professionals. These submissions are often discussed and presented at working group meetings. The  
9 references in this group are directed to quality control and scheduling resources in a mobile  
10 communication system including through HARQ processes. Therefore, a person of ordinary skill  
11 would have been motivated to combine the 3GPP Submissions with other prior art references related  
12 to the subject matter of the '726 Patent, including but not limited to references in the 3GPP  
13 Technical Specifications group, Scheduling References group, and/or the Quality Control References  
14 group.

15 Specific evidence of the motivation to combine includes the references and passages therein  
16 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
17 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
18 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
19 will be disclosed at a later appropriate stage of this case.

### 20 **(iii) Scheduling References**

21 The references in the Scheduling References group are all related to scheduling resources in a  
22 mobile communication system including through HARQ processes. Therefore, a person of ordinary  
23 skill would have been motivated to combine the Scheduling References with other prior art  
24 references related to the subject matter of the '726 Patent, including but not limited to references in  
25 the 3GPP Technical Specifications group, 3GPP Submissions group, and/or the Quality Control  
26 References group.

27 Specific evidence of the motivation to combine includes the references and passages therein  
28 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations.

1 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
2 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
3 will be disclosed at a later appropriate stage of this case.

#### 4 **(iv) Quality Control References**

5 The references in the Quality Control References group are all related to quality control in a  
6 mobile communication system including through HARQ processes. Therefore, a person of ordinary  
7 skill would have been motivated to combine the Scheduling References with other prior art  
8 references related to the subject matter of the '726 Patent, including but not limited to references in  
9 the 3GPP Technical Specifications group, 3GPP Submissions group, and/or the Scheduling  
10 References group.

11 Specific evidence of the motivation to combine includes the references and passages therein  
12 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
13 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
14 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
15 will be disclosed at a later appropriate stage of this case.

#### 16 **(e) '825 Patent**

17 The Asserted Claims of the '825 Patent are allegedly directed to communications on a shared  
18 channel in a mobile communication system. The claims recite sending a message, waiting a  
19 predetermined time before checking for a response, and if a response is received then sending  
20 another message. One of ordinary skill would have understood that conflict resolution was well  
21 understood and addressed by prior art. In many existing prior art references, a node, such as a  
22 mobile network server, is determined to resolve such conflicts following a defined procedure. One  
23 of ordinary skill would have understood that, when one node in a network resolves a conflict, it is  
24 advantageous for the remaining nodes to adjust their procedures and timing to permit that conflict  
25 resolution determination to be applied uniformly. Therefore, one of skill would have been motivated  
26 to incorporate, for instance, a delay duration to assist uniform application of that conflict resolution.  
27 Numerous prior art references disclose this, and other, functionality in a mobile communication  
28 system. Well before the '825 Patent's asserted priority date, standards, submissions, and a variety of

publications relating to this topic were well developed. Examples of such references are charted in Exhibits I-1 through I-10. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TS 25.211 v6.4.0; 3GPP TS 25.211 v6.6.0; 3GPP TS 25.214 v6.4.0; 3GPP TS 25.214 v6.7.0; 3GPP TS 25.331 v6.4.0; 3GPP TS 25.331 v6.7.0; 3GPP TS 36.321 v8.7.0; 3GPP TS 36.331 v8.7.0; 3GPP TS 36.213 v8.7.0
3GPP Submissions	R2-052889; R2-052502
WiMAX References	IEEE Std 802.16-2004
Shared Channel References	US 2004/0005887 A1; US 7,463,891; CN 1497882A; WO 2004/100403 A1; WO 2004/100598; 3GPP TS 25.211 v6.4.0; 3GPP TS 25.211 v6.6.0; 3GPP TS 25.214 v6.4.0; 3GPP TS 25.214 v6.7.0; 3GPP TS 25.331 v6.4.0; 3GPP TS 25.331 v6.7.0; 3GPP TS 36.321 v8.7.0; 3GPP TS 36.331 v8.7.0; 3GPP TS 36.213 v8.7.0; IEEE Std 802.16-2004; R2-052889; R2-052502

#### (i) 3GPP Technical Specifications

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are directed, among other disclosures, to communications on a shared channel in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the '825 Patent, including but not limited to references in the 3GPP Submissions group, WiMAX References group, and/or the Shared Channel References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

#### (i) 3GPP Submissions



1 The references in the 3GPP Submissions group were submitted by contributors to 3GPP  
2 working groups related to communications on a shared channel in a mobile communication system.  
3 It is common practice for these submissions to be uploaded to a publicly available website to further  
4 collaboration among fellow technical professionals. These submissions are often discussed and  
5 presented at working group meetings. The references in this group are directed to communications  
6 on a shared channel in a mobile communication system. Therefore, a person of ordinary skill would  
7 have been motivated to combine the 3GPP Submissions with other prior art references related to the  
8 subject matter of the '825 Patent, including but not limited to references in the 3GPP Technical  
9 Specifications group, WiMAX References group, and/or the Shared Channel References group.

10 Specific evidence of the motivation to combine includes the references and passages therein  
11 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
12 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
13 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
14 will be disclosed at a later appropriate stage of this case.

#### 15 **(ii) WiMAX References**

16 The references in the Scheduling References group are all related to the WiMAX standard  
17 and include disclosures directed to communications on a shared channel in a mobile communication  
18 system. Therefore, a person of ordinary skill would have been motivated to combine the WiMAX  
19 References with other prior art references related to the subject matter of the '825 Patent, including  
20 but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group,  
21 and/or the Shared Channel References group.

22 Specific evidence of the motivation to combine includes the references and passages therein  
23 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
24 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
25 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
26 will be disclosed at a later appropriate stage of this case.

#### 27 **(iii) Shared Channel References**

28 The references in the Shared Channel References group are all related to communications on



a shared channel in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the Shared Channel References with other prior art references related to the subject matter of the '825 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, and/or the WiMAX References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

**(f) '827 Patent**

The Asserted Claims of the '827 Patent are allegedly directed to contention detection and resolution in a mobile communication system. The claims recite receiving a random access response message, transmitting a C-RNTI to the base station, activating a timer for collision detection, and determining that a contention is resolved successfully or unsuccessfully. The claims recite a Cyclic Redundancy Check mapped to the C-RNTI. Numerous prior art references disclose this contention resolution claimed functionality in a mobile communication system. Well before the '827 Patent's asserted priority date, standards, submissions, and a variety of publications relating to this topic were well developed. Examples of such references are charted in Exhibits A-1 through A-14. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TS 25.212 v6.7.0; 3GPP TS 36.321 v8.8.0; 3GPP TS 36.212 v8.7.0; 3GPP TS 36.300 v8.8.0
3GPP Submissions	R2-060905; R1-070399; R2-063324; R2-070770; R1-061901
Contention Resolution and Random Access References	US 8,897,276; US 2010/0067495 A1; US 8,169,957; US 8,374,150; US 8,526,986; US 8,559,362; US 8,599,706; 3GPP TS 25.212 v6.7.0; 3GPP TS 36.321 v8.8.0; 3GPP TS 36.212 v8.7.0; 3GPP TS 36.300 v8.8.0; R2-060905; R1-070399; R2-063324; R2-070770; R1-061901

**(i) 3GPP Technical Specifications**

1 The references in the 3GPP Technical Specifications group are promulgated by the 3rd  
2 Generation Partnership Project, a collaboration among technical professionals such as the inventors  
3 of Samsung's Asserted Patents. The references in this group are directed, among other disclosures,  
4 to contention resolution during random access in a mobile communication system. Therefore, a  
5 person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications  
6 with other prior art references related to the subject matter of the '827 Patent, including but not  
7 limited to references in the 3GPP Submissions group and/or the Contention Resolution and Random  
8 Access References group.

9 Specific evidence of the motivation to combine includes the references and passages therein  
10 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
11 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
12 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
13 will be disclosed at a later appropriate stage of this case.

#### 14 **(ii) 3GPP Submissions**

15 The references in the 3GPP Submissions group were submitted by contributors to 3GPP  
16 working groups related to contention resolution during random access in a mobile communication  
17 system. It is common practice for these submissions to be uploaded to a publicly available website  
18 to further collaboration among fellow technical professionals. These submissions are often  
19 discussed and presented at working group meetings. The references in this group are directed to  
20 contention resolution during random access in a mobile communication system. Therefore, a person  
21 of ordinary skill would have been motivated to combine the 3GPP Submissions with other prior art  
22 references related to the subject matter of the '827 Patent, including but not limited to references in  
23 the 3GPP Technical Specifications group and/or the Contention Resolution and Random Access  
24 References group.

25 Specific evidence of the motivation to combine includes the references and passages therein  
26 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
27 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
28 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which

will be disclosed at a later appropriate stage of this case.

### (iii) Contention Resolution and Random Access References

The references in the Contention Resolution and Random Access References group are all related to and include disclosures directed to contention resolution during random access in a mobile communication system. Therefore, a person of ordinary skill would have been motivated to combine the Contention Resolution and Random Access References with other prior art references related to the subject matter of the '827 Patent, including but not limited to references in the 3GPP Technical Specifications group and/or the 3GPP Submissions group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### (g) '350 and '419 Patents

The Asserted Claims of the '350 and '419 Patents recite features relating to signaling in a wireless communication system. Numerous prior art references disclose features relating to signaling in a wireless communication system. Well before the patents' asserted priority date, standards, submissions, and a variety of publications relating to this topic were well developed. Examples of such references are charted in Exhibits E-1 through E-18 and Exhibits F-1 through F-18. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TS 36.211 v8.1.0; 3GPP TS 36.213 v8.1.0; 3GPP TS 36.213 v8.3.0; 3GPP TS 36.213 v8.7.0
3GPP Submissions	R1-070088; R1-070883; R1-074890; R1-074970 R1-075077; R1-080530; R1-081134; R1-081600 R1-082785

Group	References
Signaling References	3GPP TS 36.211 v8.1.0; 3GPP TS 36.213 v8.1.0; 3GPP TS 36.213 v8.3.0; 3GPP TS 36.213 v8.7.0; R1-070088; R1-070883; R1-074890; R1-074970 R1-075077; R1-080530; R1-081134; R1-081600 R1-082785; US 7,454,181; US 7,839,830; US 7,995,520; US 8,391,389; US 2007 0060145
Traffic-to-Pilot Ratio References	3GPP TS 36.211 v8.1.0; 3GPP TS 36.213 v8.1.0; 3GPP TS 36.213 v8.3.0; 3GPP TS 36.213 v8.7.0; R1-070088; R1-070883; R1-074970 R1-075077; R1-080530; R1-081134; R1-081600 R1-082785; US 7,454,181; US 7,839,830; US 7,995,520; US 8,391,389; US 2007 0060145

#### (i) 3GPP Technical Specifications

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are titled either "Physical Channels and Modulation" (TS 36.211) or "Physical layer procedures" (TS 36.213), and they are directed to signaling in a wireless communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the '350 and '419 Patents, including but not limited to references in the 3GPP Submissions group, Signaling References group, and/or Traffic-to-Pilot Ratio References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

#### (ii) 3GPP Submissions

The references in the 3GPP Submissions group were submitted by contributors to 3GPP

1 working groups related to signaling in a wireless communication system. It is common practice for  
2 these submissions to be uploaded to a publically available website to further collaboration among  
3 fellow technical professionals. These submissions are often discussed and presented at working  
4 group meetings. The references in this group are directed to signaling in a wireless communication  
5 system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP  
6 Submissions with other prior art references related to the subject matter of the '350 and '419 Patents,  
7 including but not limited to references in the 3GPP Technical Specifications group, Signaling  
8 References group, and/or Traffic-to-Pilot Ratio References group.

9 Specific evidence of the motivation to combine includes the references and passages therein  
10 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
11 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
12 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
13 will be disclosed at a later appropriate stage of this case.

### 14 **(iii) Signaling References**

15 The references in the Signaling References group are all related to signaling in a  
16 communication system. Therefore, a person of ordinary skill would have been motivated to combine  
17 the Signaling References with other prior art references related to the subject matter of the '350 and  
18 '419 Patents, including but not limited to references in the 3GPP Technical Specifications, 3GPP  
19 Submissions group, and/or Traffic-to-Pilot Ratio References group.

20 Specific evidence of the motivation to combine includes the references and passages therein  
21 cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations,  
22 which reflect these and additional reasons and motivations to combine and modify that Huawei may  
23 rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which  
24 will be disclosed at a later appropriate stage of this case.

### 25 **(iv) Traffic-to-Pilot Ratio References**

26 The references in the Traffic-to-Pilot Ratio References group are all related to using traffic-  
27 to-pilot ratios in a communication system. Therefore, a person of ordinary skill would have been  
28 motivated to combine the Traffic-to-Pilot Ratio References with other prior art references related to

the subject matter of the '350 and '419 Patents, including but not limited to references in the 3GPP Technical Specifications, 3GPP Submissions group, and/or Signaling References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

#### (h) 'RE105 Patent

The Asserted Claims of the 'RE105 Patent recite features relating to FT pre-coding data before an IFT operation in a wireless communication system. Numerous prior art references disclose features relating to FT pre-coding data before an IFT operation in a wireless communication system. Well before the patents' asserted priority date, standards, submissions, and a variety of publications relating to this topic were well developed. Examples of such references are charted in Exhibits C-1 through C-17. For purposes of these Contentions and to provide exemplary obviousness combinations and motivations to combine, the following groups of references are identified:

Group	References
3GPP Technical Specifications	3GPP TR 25.892 v0.2.0; 3GPP TS 36.211 v8.7.0; 3GPP TS 36.213 v8.7.0
3GPP Submissions	R1-050245; R1-050260
FT Pre-Coding References	3GPP TS 36.211 v8.7.0; Feasibility; Proposal; Uplink Systems; R1-050245; R1-050260; US 7,170,850; US 7,295,626; US 7,388,922; US 7,929,407; US 2005/0018782; US 2005/0094550; US 2006/0203932
Subcarrier Mapping References	IEEE 802.11a-1999; IEEE 802.16-2004; 3GPP TR 25.892 v0.2.0; 3GPP TS 36.211 v8.7.0; Feasibility; Proposal; Uplink Systems; R1-050245; R1-050260; US 7,170,850; US 7,295,626; US 7,388,922; US 7,929,407; US 2005/0018782; US 2005/0094550; US 2006/0203932
IFT Operation References	3GPP TR 25.892 v0.2.0; 3GPP TS 36.211 v8.7.0; 3GPP TS 36.213 v8.7.0; Feasibility; Proposal; Uplink Systems; R1-050245; R1-050260; US 7,170,850; US 7,295,626; US 7,929,407; US 2005/0018782; US 2005/0094550; US 2006/0203932

Group	References
Control Information References	IEEE 802.11a-1999; IEEE 802.16-2004; 3GPP TR 25.892 v0.2.0; 3GPP TS 36.211 v8.7.0; 3GPP TS 36.213 v8.7.0; Feasibility; Proposal; Uplink Systems; R1-050245; R1-050260; US 7,170,850; US 7,295,626; US 7,388,922; US 7,929,407; US 2005/0018782; US 2005/0094550; US 2006/0203932

### (i) 3GPP Technical Specifications

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are related to FT pre-coding data before an IFT operation in a wireless communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Technical Specifications with other prior art references related to the subject matter of the 'RE105 Patent, including but not limited to references in the 3GPP Submissions group, FT Pre-Coding References group, Subcarrier Mapping References group, IFT Operation References group, and/or Control Information References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### (ii) 3GPP Submissions

The references in the 3GPP Technical Specifications group are promulgated by the 3rd Generation Partnership Project, a collaboration among technical professionals such as the inventors of Samsung's Asserted Patents. The references in this group are related to FT pre-coding data before an IFT operation in a wireless communication system. Therefore, a person of ordinary skill would have been motivated to combine the 3GPP Submissions with other prior art references related to the subject matter of the '105 Patent, including but not limited to references in the 3GPP Technical Specifications group, FT Pre-Coding References group, Subcarrier Mapping References group, IFT Operation References group, and/or Control Information References group.



Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### **(iii) FT Pre-Coding References**

The references in the FT Pre-Coding References group are related to FT pre-coding in a communication system. Therefore, a person of ordinary skill would have been motivated to combine the FT Pre-Coding References with other prior art references related to the subject matter of the 'RE105 Patents, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, Subcarrier Mapping References group, IFT Operation References group, and/or Control Information References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

### **(iv) Subcarrier Mapping References**

The references in the Subcarrier Mapping References group are related to mapping to subcarriers in a communication system. Therefore, a person of ordinary skill would have been motivated to combine the Subcarrier Mapping References with other prior art references related to the subject matter of the 'RE105 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, FT Pre-Coding References group, IFT Operation References group, and/or Control Information References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which



will be disclosed at a later appropriate stage of this case.

**(v) IFT Operation References**

The references in the IFT Operation References group are related to performing an IFT operation in a communication system. Therefore, a person of ordinary skill would have been motivated to combine the IFT Operation References with other prior art references related to the subject matter of the 'RE105 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, FT Pre-Coding References group, Subcarrier Mapping References group, and/or Control Information References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

**(vi) Control Information References**

The references in the Control Information References group are related to using control information such as pilot signals in a communication system. Therefore, a person of ordinary skill would have been motivated to combine the Control Information References with other prior art references related to the subject matter of the 'RE105 Patent, including but not limited to references in the 3GPP Technical Specifications group, 3GPP Submissions group, FT Pre-Coding References group, Subcarrier Mapping References group, and/or IFT Operation References group.

Specific evidence of the motivation to combine includes the references and passages therein cited in the claim charts submitted herewith regarding this patent for the applicable claim limitations, which reflect these and additional reasons and motivations to combine and modify that Huawei may rely upon. Huawei also expects to rely on expert testimony regarding motivation to combine, which will be disclosed at a later appropriate stage of this case.

**d. Obviousness Combinations**

Huawei discloses the combination of references as set forth in the claim charts identified below in Section D.

1           3. On information and belief, Messrs. Kim, Van Lieshout, and Vander Velde received  
2           the NEC paper by email prior to the Sophia Antipolis meeting; and

3           4. Messrs. Kim, Van Lieshout, and Vander Velde attended the Sophia Antipolis  
4           meeting.

5           These actions render the '588 patent unenforceable based on inequitable conduct.

6           **B. '105 Patent**

7           The '105 patent is also unenforceable due to inequitable conduct. Upon information and  
8           belief, Samsung and at least its employee and named inventor Farooq Khan withheld prior art that  
9           they knew to be material to patentability, with the specific intent to deceive the United States  
10          Patent & Trademark Office.

11          The '105 patent is a reissue of U.S. Patent No. 7,787,546. Samsung has claimed that the  
12          '105 patent is entitled to a priority date and conception date of April 6, 2005. Samsung's L.R. 3-1  
13          Disclosures at 8. The named inventor on the '105 patent is Farooq Khan. The '105 patent is  
14          entitled "Apparatus and Method for FT Pre-Coding of Data to Reduce PAPR in a Multi-Carrier  
15          Wireless Network."

16          The '105 patent explains that signal distortion and adjacent channel power noise is  
17          "especially problematic in systems that have large peak-to-average power ratios (i.e., high crest  
18          factors), such as OFDM and OFDMA systems. To avoid this, power amplifiers often operate in  
19          "back-off" mode (i.e., reduced input signal) in order to accommodate large signal peaks. However,  
20          operating in back-off mode requires the use of devices with higher power ratings which adds to  
21          system design, development and manufacturing costs. Furthermore, it may be inefficient and may  
22          generate excessive heat." '105 patent at 2:7-16. The '105 patent further explains that "there is a  
23          need for improved OFDM and OFDMA transmission system[s] that minimize amplifier peak-to-  
24          average power ratio (PAPR) without suffering performance degradation." *Id.* at 2:17-20. The '105  
25          patent purports to provide such a solution with "a mechanism for FFT pre-coding of data to reduce  
26          peak-to-average power ratio (PAPR) in a multi-carrier wireless network." *Id.* at 1:38-40.

27          In particular, the '105 patent describes a method for reducing PAPR, comprising:  
28          "receiving input symbols to be transmitted to the base station; performing a size M Fourier

1 an inverse FT (IFT) block configured to perform an IFT operation on at least one of (i) the  
2 FT pre-coded symbols based on the first set of subcarriers and (ii) the non-FT pre-coded  
3 modulation control symbols based on the second set of subcarriers to generate an output  
4 signal,

5 wherein the apparatus is configured to transmit the output signal.

6 During the prosecution of the '105 Patent and the prosecution of the patent of which it is a  
7 resissue, Samsung and Mr. Khan disclosed no prior art references to the Patent Office. For  
8 example, Samsung and Mr. Khan failed to disclose prior art references from the 3GPP TSG RAN  
9 Working Group meeting in Beijing, China from April 4-8, 2005 ("Beijing meeting"). It is common  
10 practice to upload submissions to the working group on a publically available website before such  
11 a 3GPP meeting. Any document uploaded before the Beijing meeting would have been uploaded  
12 before the '105 Patent's alleged conception and priority date of April 6, 2005, and is therefore prior  
13 art under at least 35 USC § 102(a). Mr. Khan attended the Beijing meeting. *See*  
14 <http://webapp.etsi.org/3GPPRegistration/fViewPart.asp?mid=24562>.. Mr. Khan also presented  
15 three papers during the Beijing meeting, confirming his attendance and participation in the  
16 meeting. *See* [http://www.3gpp.org/ftp/tsg\\_ran/WG1\\_RL1/TSGR1\\_40/Report/R1-050369.zip](http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_40/Report/R1-050369.zip) (R1-  
17 050574). On information and belief, Samsung and Mr. Khan knew of such prior art references  
18 created at and before the Beijing meeting but withheld them from the Patent Office.

19 Specifically, Samsung and Mr. Khan withheld from the Patent Office at least the following  
20 submissions: R1-050245 ("Uplink Multiple Access for EUTRA" by Motorola) and R1-050260  
21 ("Multiple Access Scheme Evaluation for the SI 'Evolved UTRA and UTRAN' Uplink" by  
22 Siemens AG). Both of these submissions were presented at the Beijing meeting. Both submissions  
23 were uploaded to the publically available 3GPP website on March 31, 2005, making them prior art  
24 under at least 35 USC § 102(a). The R1-050245 and R1-050260 submissions describe the  
25 reduction of PAPR through a Fourier transform (FFT or DFT) in an OFDM and/or similar system.  
26 Both of the R1-050245 and R1-050260 submissions anticipate or render obvious the alleged  
27 invention in the '105 Patent. As such, both references are prominent prior art references in  
28

1 Huawei's invalidity contentions. Exhibits C-9 and C-10 provide a detailed analysis showing how  
2 these references invalidate the '105.

3 As a result, submissions R1-050245 and R1-050260 are material to the '105 patent, and the  
4 '105 patent would not have issued had the patent examiner known of the R1-050245 and R1-  
5 050260 submissions. Further, the R1-050245 and R1-050260 submissions would not have been  
6 cumulative of information before the patent examiner during prosecution. The patent examiner  
7 could have combined these references with the references he found himself. As previously noted,  
8 Samsung and Mr. Khan disclosed no references during the prosecution of the '105 Patent.

9 Upon information and belief, Samsung and Mr. Khan knew of the R1-050245 and R1-  
10 050260 submissions and other prior art references, knew of the materiality of the R1-050245 and  
11 R1-050260 submissions and other prior art references to the '105 patent, and purposely concealed  
12 the R1-050245 and R1-050260 submissions and other prior art references. Mr. Khan participated  
13 actively in the Beijing meeting where the R1-050245 and R1-050260 submissions were disclosed.  
14 However, Mr. Khan and Samsung did not disclose the R1-050245 and R1-050260 submissions to  
15 the patent examiner during prosecution of the '105 patent, as shown by the absence of Information  
16 Disclosure Statements submitted during prosecution.

17 During prosecution of the patent of which the '105 patent is a reissue of, the named  
18 inventor Mr. Khan signed a declaration submitted to the patent office on March 14, 2006 that stated  
19 that he "acknowledge[s] the duty to disclose to the Office all information known to me to be  
20 material to the patentability of this application as defined by Title 37, Code of Federal Regulations,  
21 § 1.56." US Pat. No. 7,787,546 File History, 3/14/2006 Inventor Declaration. p. 1. He further  
22 declared that "all statements made herein of my own knowledge are true and that all statements  
23 made on information and belief are believed to be true" and that "willful false statements may  
24 jeopardize the validity of the application or any patent issuing thereon." *Id.* at 3. This signed  
25 declaration was also included in the prosecution history of the '105 Patent. Further, Mr. Khan  
26 signed a declaration submitted to the patent office on November 27, 2012 that stated that he  
27 "acknowledge[s] the duty to disclose information which is material to patentability as defined in 37  
28 CFR 1.56." '105 Patent File History, 9/27/2012 Inventor Reissue Declaration. p. 1. He again

1 declared that “all statements made herein of my own knowledge are true and that all statements  
2 made on information and belief are believed to be true” and that “willful false statements may  
3 jeopardize the validity of the application, any patent issuing thereon, or any patent to which this  
4 declaration is directed.” *Id.* at 2.

5 Upon information and belief, Mr. Khan and Samsung breached their duty of candor and  
6 good faith under 37 C.F.R. § 1.56 by withholding all known material prior art, specifically the R1-  
7 050245 and R1-050260 submissions, with the specific intent to deceive the patent office during  
8 prosecution of the '105 patent. Evidence of their specific intent to deceive the patent office into  
9 believing that the prior art did not disclose the limitations of the claims that led the examiner to  
10 issue the '105 patent include the following:

- 11 • Mr. Khan submitted papers that were presented at the Beijing meeting;
- 12 • Mr. Khan attended the Beijing meeting;
- 13 • Mr. Khan presented papers at the Beijing meeting;
- 14 • On information and belief, Mr. Khan was aware of the R1-050245 and R1-050260  
15 submissions and other similar submissions prior to the Beijing meeting;
- 16 • On information and belief, R1-050245 and R1-050260 Mr. Khan was present when  
17 the R1-050245 and R1-050260 submissions and other similar submissions were  
18 presented and discussed at the Beijing meeting; and
- 19 • Mr. Khan failed to disclose R1-050245 and R1-050260 to the PTO.

20 These actions render the '105 patent unenforceable based on inequitable conduct.

### 21 C. '195 Patent

22 All the claims of the '195 patent are unenforceable due to inequitable conduct committed  
23 by, at least, one or more of the inventors during the prosecution of the '195 patent. Huawei intends  
24 to take discovery to develop evidence to support the following explanation of the inequitable  
25 conduct, which it now understands based on information and belief and reasonable suppositions.

26 At least one of the inventors failed to disclose material, non-cumulative prior art of which  
27 this named inventor(s) was aware. The inventors deliberate decision to withhold material  
28 information in the form of a prior art publication during the application leading to the '195 patent

1 Dated: September 22, 2017

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